

Amendment and Response

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Serial No.: 10/734,682

Confirmation No.: 1223

Filed: 12 December 2003

For: SAMPLE MIXING ON A MICROFLUIDIC DEVICE

Amendments to the Drawings

The attached sheet of drawings includes changes to Figure 8. This sheet replaces the original sheet containing Figures 7-8.

Attachment: Replacement Sheet

Remarks

The Office Action of 5 September 2007 has been received and reviewed. Claims 11-29 have been canceled (without prejudice), claims 1, 2, 4, and 10 have been amended, and new claims 30-38 are presented. Therefore, claims 1-10 and 30-38 are pending. Reconsideration and withdrawal of the rejections are respectfully requested as discussed below.

Drawing Amendments

Figure 8 has been amended to include reference lines and numbers "212, 219" indicating the major sides of the sample processing device depicted in Figure 8. Support for these amendments may be found in the application as filed at, e.g., page 11, lines 3-8.

Entry and consideration of these drawing amendments are respectfully requested.

Specification Amendments

The paragraph beginning on line 30 of page 10 has been amended to include references numbers 212 and 219, which correspond to the major sides of the sample processing device depicted in Figure 8.

Entry and consideration of these amendments are respectfully requested.

Claim Amendments

Claims 1, 2, and 4 have been amended to recite "valve" instead of "exit port." Claim 2 has been further amended to recite "normally-closed" instead of "closed." Claim 10 has been amended to recite "normally-closed valve" instead of "exit port." Support for these amendments can be found in the application as filed at, e.g., page 6, lines 15-17. Further, claims 1 and 10 have been amended to correct minor typographical errors. These amendments are not intended to narrow the scope of the claims, i.e., the scope of the claims is intended to be the same after the amendments as it was before.

Entry and consideration of these amendments are respectfully requested.

New Claims

New claims 30-38 are presented to provide Applicants with more comprehensive protection for the present invention. Support for new claims 30-38 can be found in the application as filed at, e.g., page 5, lines 31-32, original claims 1-9.

Entry and consideration of these claims are respectfully requested.

37 C.F.R. § 1.83(a) Objection

The drawings were objected to under 37 C.F.R. § 1.83(a). Specifically, it is asserted that the exit port as recited in claims 1, 2, 4, and 10 and a first major side and a second major side of the sample processing device recited in claims 6 and 10 must be shown or the feature(s) canceled from the claim(s). *See Office Action*, 5 Sept. 2007, page 5. Applicants respectfully traverse this objection. However, in an effort to move the prosecution of this application forward, claims 1, 2, 4, and 10, the specification, and the drawings have been amended as discussed above.

It was also asserted that the "exit port" recited in claims 1 & 10 was not depicted in the figures. Applicants have amended claims 1 & 10 to replace "exit port" with "valve" thereby rendering this objection moot.

In view of these amendments, reconsideration and withdrawal of this objection are respectfully requested.

Election Affirmation

A Restriction Requirement was issued under 35 U.S.C. § 121 in the above-identified application, grouping the claims as follows: Group I, Claims 1-10, drawn to a sample mixing structure, Group II, Claims 11-20, drawn to a sample mixing structure comprising a first mixing chamber and a second mixing chamber, Group III, Claims 21-28, drawn to a method of mixing fluids, and Group IV, Claim 29, drawn to a method of mixing fluids. A provisional election to prosecute claims 1-10, Group I, was made in response to a telephone conversation with Applicants' Representative, Kevin Raasch, and the Examiner on 29 August 2007.

The provisional election to prosecute Group I is affirmed without traverse.

Canceled Claims

Please cancel claims 11-29 (drawn to the non-elected inventions) without prejudice.

The 35 U.S.C. § 102 Rejection

Claims 1-7 and 9 were rejected under 35 U.S.C. § 102(b) as being anticipated by Anderson et al. (U.S. Patent No. 3,873,217). Applicants respectfully traverse this rejection.

For a claim to be anticipated under 35 U.S.C. § 102, each and every element of the claim must be found in a single prior art reference (M.P.E.P. § 2131). Applicants respectfully submit that Anderson et al. fails to teach each and every element of claims 1-7 and 9.

For example, nothing is identified within the disclosure of Anderson et al. that discloses "a valve on a distal side of the process chamber" and "a mixing chamber comprising a mixing port, wherein the mixing port is located on the distal side of the process chamber" as recited in amended independent claim 1. Nor does Anderson et al. disclose "a normally-closed valve on a distal side of the process chamber" and "a mixing chamber comprising a mixing port, wherein the mixing port is located on the distal side of the process chamber" as recited in amended independent claim 10.

In contrast, the device described in Anderson et al. includes a loading cavity 3 (indicated as equivalent to the claimed process chamber in the Office Action) that only includes a single port, i.e., passageway 12, on its distal side. As such, Anderson fails to teach a valve and a mixing port on a distal side of a process chamber as required to anticipate independent claims 1 and 10.

It is asserted that the exit port of Anderson et al. is "not labeled see figure 1." *Office Action*, 5 Sept. 2007, page 6. As a result, Applicants are unclear as to what is being equated within Figure 1 of Anderson et al. to the claimed "valve" (formerly "exit port") of the process chamber.

As described above, cavity 3 in Figure 1 of Anderson et al. includes only one feature located on its distal end side, i.e., passageway 12 (indicated as equivalent to the claimed mixing port in the Office Action). If this rejection is maintained, clarification is requested as to what feature in Figure 1 of Anderson et al. is being equated to the recited valve on a distal side of the process chamber.

Further, Applicants submit that Anderson et al. does not disclose a mixing chamber that is "located between the process chamber and the second major side of the sample processing device" as recited in independent claim 10 and dependent claim 6. It is asserted that "at least a portion of mixing chamber (2) is located between the process chamber (3) and the second major side (not labeled see figure 1)." *Office Action*, 5 Sept. 2007, page 7. However, Figure 2 (a cross section of Figure 1) shows that no portion of the cuvette 2 is located between a major surface of either top plate 6 or bottom plates 7 and the loading cavity 3. Instead, the loading cavity 3 and the cuvette 2 of Anderson et al. are merely located next to each other.

For at least these reasons, Applicants respectfully submit that independent claims 1 and 10 are not anticipated by Anderson et al. Further, claims 2-7 and 9 are also not anticipated by Anderson et al. because such claims are either directly or indirectly dependent on claim 1, and because these claims recite additional elements that may further support patentability. Reconsideration and withdrawal of this rejection are respectfully requested.

The 35 U.S.C. § 103 Rejection

Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson et al. in view of Kellogg et al. (U.S. Patent No. 6,302,134). Applicants respectfully traverse this rejection.

In view of the discussion above regarding the limited teachings of Anderson et al., Applicants submit that Anderson et al. does not teach, or suggest, "a valve on a distal side of the process chamber" and "a mixing chamber comprising a mixing port, wherein the mixing port is located on the distal side of the process chamber" as recited in independent claim 1 (from which

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dependent claim 8 depends upon). Moreover, Applicants submit that nothing identified within Kellogg et al. remedies this deficiency.

For at least these reasons, Applicants respectfully submit that a *prima facie* case of obviousness has not been established for claim 8 over Anderson et al. in view of Kellogg et al. Reconsideration and withdrawal of the rejection are respectfully requested.

Summary

It is respectfully submitted that the pending claims are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

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December 5, 2007

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CERTIFICATE UNDER 37 CFR §1.10:

"Express Mail" mailing label number: EV 201 878 237 US

Date of Deposit: December 5, 2007

I hereby certify that the Transmittal Letter and the paper(s) and/or fee(s), as described hereinabove, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to: **Mail Stop Amendment**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By: Rachel Ogilinski

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